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loops, the station again approached the crest of the underwater range in the beginning of October, this time somewhat to the east and south of the point where the range was crossed the first time.

The personnel of the station took frequent soundings on the spurs and slope of the range as the ice floe passed over it. Bottom samples which were raised contained yellowish-gray mud, pebbles, and detritus. Future analysis of these deposits will determine their age. The deep-water trawl raised mollusks, worms, starfish, and sea urchins. It was established that more organic life exists on the slopes of the range imeni Lomonosov than in the deep water of the depressions.

The high-latitude expedition of 1950 and the drifting station Severnyy Polyus 2 in 1950-1951 found a layer of relatively warm water, apparently of Pacific origin, in the eastern part of the Arctic Basin at a depth of 75-150 meters. Current investigations have established the penetration of this layer further north into the region of the pole.

During the time of the drift, seals have frequently climbed up on the station's ice floe on sunny days, and in the summer months varicolored small crayfish, jellyfish, and great varieties of algae were observed in the upper water layers.

In addition to oceanography work, magnetic and meteorological observations have been carried out on a large scale. During the drift of the station, the zone of the greatest magnetic anomaly in the Northern Hemisphere was crossed. The station sends weather observations several times a day to the mainland for use in forecasts and sailing directions on the Northern Sea Route.

Both of the drifting stations have maintained close communications with scientific workers on the mainland, and the stations have been visited many times by representatives of the Academy of Sciences USSR. Those making flights to the stations to assist in the work include: L. A. Zenkovich, associate member of the academy; oceanographer V. G. Kort, and glaciologist P. A. Shumskiy. Prof. A. Ye. Kriss has flown to Severnyy Polyus 3 twice and made microbiologic investigations for the first time in high latitudes.

In spite of the more severe conditions arriving with the polar night, the station's operations are continuing. -- A. Treshnikov, chief, Severnyy Polyus 3

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Moscow, Izvestiya, 12 Nov 54

At the end of October, Severnyy Polyus 4, during a steady drift to the north-northeast, crossed the 60th parallel for the second time. The drift then became north-northwest. The camp is now in an area with water depths little more than 1,500-1,600 meters.

With the arrival of winter the process of ice formation has been accelerated. This closing of water areas has affected the ice drift which was 40 percent slower in October than in September.

Since the day of its formation, Severnyy Polyus 4 has drifted over 1,600 kilometers and has crossed five parallels of latitude. On 3 November, the station was located at 80 20 02 N and 47 13 01 E.

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At the end of October, when the station was in seas with a depth of 1,600 meters, a trawl arrangement was rigged and the bottom dragged. This rig brought up a number of bottom fauna which had not been encountered before and which were quite different from those specimens taken at more shallow depths.

As the leads and pools are covered with young ice, more and more pressure is being exerted on the old ice and hummocking is increasing. The ice floe on which Severnyy Polyus 4 is located is now surrounded with pressure ridges, and intensified pressure from the southwest and later from the north has considerably reduced the size of the station floe.

In 7 months of scientific work, the station has made over 600 ocean depth measurements, about 150 radiosonde observations, 20 deep-water hydrological stations [sic], about 400 balloon observations, and 500 actinometric observations. Over 1,600 meteorological observations have been made, the coordinates of the station have been computed more than 170 times, and the magnetic variation has been determined about 700 times. To assure the taking of radiosonde observations, over 1,500 cubic meters of hydrogen have been expended. -- Dralkin, deputy chief, Severnyy Polyus 4

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Geograficheskaya, No 5, Sep-Oct 54

The largest and deepest depression [in the Arctic Ocean] lies to the north of the Greenland, Barents, Kara, and Laptev seas. It runs along the range imeni Lomonosov and is bounded on the south by the Porog Nansen ["Nansen Entrance"] lying between Svalbard and Greenland, and the Barents-Kara continental slope. The maximum depth of this depression is more than 5,220 meters according to soundings taken from the icebreaker SS Georgiy Sedov, and even at this depth the sounding line did not reach the bottom.

The depression lying on the other side of the underwater range imeni Lomonosov is not large. It lies to the north of 85 degrees latitude between 160 E and 90 W longitude, and has an almost oval shape. From the south (toward Asia and Canada) this depression is bounded by a large underwater plateau at a depth of 2300-2800 meters.

A third depression with depths up to 3,820 meters lies to the north of the Chukotsk and Beaufort seas. This depression is connected to the depression of the Beaufort sea by a narrow deep-water strait with depths to 4,689 meters.

During the computation of bottom charts of the Arctic Ocean, the presence of many mountain chains has been established outside of the area of the range imeni Lomonosov. In the absence of complete data for these areas of the ocean, only conjectures can be made at the present time.

Apparently, there is another mountain system on the bottom of the Arctic Ocean which is of more ancient folding than the Lomonosov range and which forms almost parallel ranges intersecting the Lomonosov Range at angles of 60-120 degrees.

[Comment: Source carried a photograph ( ) showing a general view of Severnyy Polyus 3 in May 1954. Illustrations also included charts, which are reproduced in this report as Figures 1-7, appended.]

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ORGANIZATION AND ESTABLISHMENT OF DRIFT STATIONS -- Tbilisi, Zarva Vostoka, 29 Jul 54

The main group of the 1954 high-latitude expedition took off by plane from Moscow and soon arrived on Ostrov Dikson, the meeting place for all members of the expedition.

Dikson is no longer a wintering place of four houses, as many members of the expedition remembered it. It is a polar city now, and one of the important ports on the Northern Sea Route. The city has repair shops, a secondary school, two clubs, a library, a hospital, nurseries, a newspaper, two-story houses, a hotel, and stores.

A polar observatory is located on Dikson where observations are made by meteorologists, astronomers, aerologists, actinologists, and radio technicians, and from the families of these men alone, 18 young men and women attend the Dikson secondary school.

The directors of the polar expedition discussed the plan for the establishment of the drift stations during their stay in Dikson. The over-all plan was as follows: the air group under M. A. Titlov, based at Tiksi and Mys Shmidt, was to set down the station headed by Tolstikov in the eastern sector of the Arctic. The air group under the direction of I. S. Kotov, based at Dikson, Mys Chelyuskin, and other shore points, was to establish the station headed by Treshnikov in the Central Arctic. The mobile air group headed by Cherevichnyy was also to be based in Dikson and was to establish intermediary bases in the area of Franz Joseph Land and on the ice. Their mission was to move two groups of scientists from ice floe to ice floe to make mobile observations. In addition to these three main groups, there were to be regular flights over the polar area by "flying laboratories." It was also necessary to set up a net of intermediary bases on land and on the ice for depositing fuel for the planes, food for the men, etc. -- Artemov, TASS correspondent

Kishinev, Sovetskaya Moldaviya, 29 Jul 54

Twenty years ago the flight to Mys Chelyuskin was dangerous, but this flight has now become routine for the fliers of Polar Aviation. The polar station there is well equipped with a club library, baths, etc.

Mys Chelyuskin is now full of people -- the crew of I. S. Kotov's plane, the crew of P. P. Moskalenko's plane, members of Treshnikov's group, and correspondents. From here, Kotov and Moskalenko are to make the hop to the ice floe which will serve as the intermediary base for the establishment of Severnyy Polyus 3. The need for such an intermediary base is readily apparent when the requirements of Severnyy Polyus 3 are compared with Severnyy Polyus 1 under Papanin. Papanin's group was set on the ice from Ostrov Rudol'f, at a distance of 900 kilometers. The entire weight of the station was only 9 tons. For Severnyy Polyus 3, many times that weight must be set on the ice and at a distance 1 1/2 times as far.

Kotov and Moskalenko, with Treshnikov aboard, flew from here to locate the base. As soon as Kotov radioed back that a landing was made, planes piloted by Shatrov, Mironenko, and Stupishin flew to the location with supplies. -- I. Artemov, special correspondent, TASS

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Kiev, Stalinskoye Plemya, 15 Aug 54

While supplies for Severnyy Polyus 4 were concentrated on Mys Shmidt from Moscow and Bukhta Provideniya (delivered by the icebreaker Mikoyan), the pilots I. Mazuruk, M. Titlov, and A. Zhgun made daily flights to the north studying ice floes.

When the camp site was chosen, supplies were moved north from Tiksi and Wrangell Island.

Moscow, Pravda, 31 Oct 54

In October, fliers of Polar Aviation began regular flights to the two drifting stations through the Polar night.

Planes piloted by Kotov, Shatrov, Titlov, Osipov, Bakhtimov, Zadkov, Cherevichnyy, and Mazuruk, with the navigators Morozov, Krivosheyev, Makarov, and others, are making regular flights to the scientific drift stations delivering winter equipment and supplies. The SSSR N-430 is one of the planes being used in this service.

Moscow, Nauka i Zhizn', No 9, Sep 54

Diesel tractors were supplied to both the drifting stations.

The mobile component of the 1954 arctic expedition is actually composed of two groups: Cherevichnyy and Ostrekin are operating in the area near the pole and the group headed by V. I. Maslennikov is operating in the eastern part of the Asiatic continental slope.

PERSONNEL OF DRIFT STATIONS AND SUPPORT GROUPS -- Moscow, Komsomol'skaya Pravda, 22 Jul 54

A supply plane piloted by Kotov has arrived in Severnyy Polyus 3 bringing the long-awaited generator for the aerologists, among 1,347 kilograms of cargo.

The aerology section at the station is headed by V. G. Kanaki, a veteran polar worker. He began his Arctic service in 1932 when the Soviet Union built 11 new polar stations as part of the nation's participation in the Second International Polar Year. Kanaki built one of these stations and, from that time on, wintered in the Arctic at many shore points, on the islands of Novaya Zemlya, and on Franz Joseph Land. Kanaki was the first of the polar aerologists successfully to launch a stratosphere balloon from Franz Joseph Land. In those days, Kanaki recalls, the equipment weighed 18 kilograms and was raised by five balloons of 5 cubic meters each. Now, Soviet precision equipment is able to rise as much as 30 kilometers. Beginning in 1948, Kanaki took part in high latitude expeditions, drifting for 7 months with Severnyy Polyus 2 during which time he took 350 observations.

The second aerologist at the station is Platon Platonovich Poslavskiy. As a student he worked in the Irkutsk observatory, and in 1933, during the transfer of ships from the Lena to the Kolyma river, he was aboard the SS Revolyutsionnyy. The ship was caught in the ice and sank, Poslavskiy escaping in a life boat.

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The third aerologist is Igor' Tsigel'nitskiy. Only 22 years old, he completed his studies at Middle School 247 in Leningrad and studied at the Arctic Institute. -- P. Barashev, special correspondent

Leningradskaya Pravda, 25 Jul 54

Oceanographer V. A. Shamont'yev, deputy director of Severnyy Polyus 3, was trained as a Komsomol member and spent the entire period of the World War II at the front where he was admitted to the Communist Party. He completed higher schooling after demobilization, then completed scientific studies at the Arctic Institute and numerous expeditions into the Polar Basin.

The biography of his assistant, Aleksandr Dmitriyev, is similar. Serving during the war with the Black Sea Fleet, his ship was burned and sunk. This is the second drift for Dmitriyev.

The third member of this young oceanography group is Georgiy Andreyevich Ponomarenko, a seasoned polar worker and participant in many Arctic expeditions.

The oceanography division is perhaps the largest on the floe. They have four holes cut through ice 3 meters thick, each of which is covered with a tent. Each tent contains a variety of equipment designed by the Arctic Institute: winches, instruments, and motors. In addition, there is a chemical laboratory for hydrology work.

Each day the oceanography section takes depth soundings, raises bottom samples, and measures temperatures of the water at various levels. This group also takes plankton and benthos samples, measures the speed and direction of the current, etc. In addition, the program for this group includes ice-measurement work and chemical analysis of water and bottom samples.

The aerology group is also made up of three young men. Two of them, Vasily Gavrilovich Kanaki and Platon Platonovich Poslavskiy, have taken part in three high-latitude expeditions. The third member of the group is Komsomol member Igor' Tsigel'nitskiy, the youngest member of the station.

Theoretically each of the aerologists is to be on duty 12 hours a day, but in practice they work from 15 to 16 hours. This group sends radiosondes aloft and records the resulting information. In addition, they must prepare the aerostats to which radiosondes are attached.

Two radio operators are attached to this station, Konstantin Kurko and Leonid Roubash.

The group is visited daily by the station's doctor, Vitaliy Volovich, who drifted on Severnyy Polyus 2 with Somov.

The camp has been visited by Mikhail Mikhaylovich Somov who headed Severnyy Polyus 2 in 1949-1950. -- I. Artemov, special TASS correspondent

Leningrad, Leningradskaya Pravda, 24 Jul 54

The majority of the scientific workers at Severnyy Polyus 3 are from Leningrad and are members of the Arctic Institute. They include hydrologists V. Shamont'yev, G. Ponomarenko, A. Dmitriyev; Magnetologist N. Popkov; geophysicists O. Zmachinskiy, I. Kuchuberiya; aerologists V. Kanaki, I. Tsigel'nitskiy; Meteorologist A. Malkov; and Cook I. Sharikov.

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Moscow, Vokrug Sveta, No 9, Sep 54

In addition to such experienced polar fliers and navigators as Cherevichnyy, Mazuruk, Kotov, Zhukov, Morozov, Titlov, Maslennikov, Perov, Zadkov, Banyushevich, Zubov, and Ivanov, younger men took part in establishing the drift stations, such as Zhigun, Turkin, Matsuk, Sorokin, Tisenko, Tulin, Kash, and V. Ivanov.

#### SCIENTIFIC GROUPS VISIT POLAR EXPEDITION -- Moscow, Izvestiya, 21 Jul 54

As a member of the group which organized the 1954 polar expeditions, D. Shcherbakov, secretary of the Division of Geologic-Geographic Science, Academy of Sciences USSR, made a flying visit to the drifting stations in the spring of this year.

On 27 April, he took off from Amderma in a plane piloted by I. P. Mazuruk. They flew first to Ostrov Dikson, where they landed. On 29 April, they took off once more and directed their course northward over Mys Zhelaniya (Novaya Zemlya) and Ostrov Sal'm (Franz Joseph Land) to Mys Granta on Zemlya Georga. Here they landed at the temporary base of Cherevichnyy's mobile air expedition.

On 1 May, the plane took off again and at 0750 crossed the 89th parallel, 45-50 kilometers from the pole. A minute past the 40-kilometer mark, Chervichnyy's group was spotted, and on landing he and his coworkers were greeted. The group was made up of Chervichnyy, with his scientific workers Ye. K. Fedorov, Ya. Ya. Gakkel', and M. Ye. Ostrekin. The temperature at the camp was 19 degrees below zero.

After consultations with the group and discussions on the work being carried out, Shcherbakov's plane took off for Severnyy Polyus 3.

Moscow, Izvestiya, 29 Jul 54

The group of scientists who visited Severnyy Polyus 3 and Severnyy Polyus 4 for a period of about 2 weeks [redacted] included V. G. Kart, director of the Institute of Oceanography, Academy of Sciences USSR.

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#### EQUIPMENT AT DRIFT STATIONS -- Moscow, Vodnyy Transport, 28 Aug 54

The Moscow shops of the Administration of Finishing Work, Glavmosstroy (Main Administration of Housing and Civil Construction, Executive Committee of the Moscow City Soviet) are building homes for workers at the polar drift stations.

The frame of the house is of dried pine with "arktilit" walls. The arktilit panels are screwed to the frame every 50 millimeters and a layer of cork is placed between the inner and outer panel covering.

The ceilings and floors of the houses are also of "arktilit," which is composed of steel screening stretched on wooden frames and covered with linen cloth. The entire panel is then impregnated with a special compound.

The assembled house contains a heating system (including a boiler), a toilet, foyer, and an 18-square-meter central room for four men. It can be assembled in 5-6 hours by four men.

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Baku, Bakinskiy Rabochiy, 3 Aug 54

The Shaposhnikov houses built for the polar drift stations weigh 750 kilograms and are composed of 40 pieces. The walls are made of sheets covered with chemically treated tar. A house is 4.5 meters long, 2.5 meters wide, and 2.35 meters high. It will accommodate four men. Ten of these houses were delivered on 30 July.

Leningradskaya Pravda, 24 Jul 54

The Leningrad Steel Rolling and Wire Rope Plant imeni Molotov produced the wire rope used for sounding devices at Severnyy Polyus 3. The scientific equipment at the station was produced by the experimental shops of the Arctic Institute, with help from many Leningrad industries, notably the Krasnyy Metallist Plant.

ACCOUNT OF 1948 POLAR EXPEDITION -- Baku, Bakinskiy Rabochiy, 3 Aug 54

The underwater range imeni Lomonosov was discovered in 1948 by a Leningrad Arctic Institute expedition headed by Ya. Ya. Gakkel'.

This 1948 expedition established that the Arctic Ocean is actually several depressions separated by underwater mountain ranges and elevations, the largest of which is the range imeni Lomonosov. This range has an overall length of 1,800 kilometers and a height of 2.5-3 kilometers.

This range was formed many million of years ago, reaching to the surface of the ocean at that time and dividing the Arctic Ocean into two separate parts.

It is interesting to note that the range imeni Lomonosov divides the Arctic Basin into separate water masses and types of fauna as well. The 1948 expedition found varieties of fauna which were of different types than were hitherto known to science.

The drifting station Severnyy Polyus 3, now in the area of the range imeni Lomonosov, is sending material on the range to the Arctic Institute continually. -- TASS interview with Gakkel'

TRIP THROUGH KOLA PENINSULA -- Moscow, Vokrug Sveta, No 4, Apr 52

[Comment: The following account of a trip through the southeastern sector of the Kola Peninsula is from an article by P. Shvedov.]

After a 50-hour trip from Moscow, we finally arrived at the Olen'ya station. The railroad was lined with trains full of construction materials, and the area was covered with unloaded structural steel, beams, boards, and bricks. All this activity pertained to the construction of the entirely new city of Olen'yegorsk, 4 kilometers from Olen'ya.

The tour began the following day in Monchegorsk, where trolley buses and trucks rolled along streets lined with four-story buildings and electric power lines. Here and there tower cranes could be seen, indicating the growth of the city

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In this city we visited producing industries, administrative buildings, Pioneer homes, a hotel, and a park of culture and rest. All of this was built in 15 years in the wild 'Monchetundra'.

From Monchegorsk our route covered 300 kilometers without roads through swamps and over lakes to Umbozero [lake], then to the settlement of Lesnoy on the shores of the White Sea, and finally to the west, to the railroad at Kirovsk.

At the end of Symbozero [lake] we came upon a timber point where a new house had been built. Inside, a group of girls were seated around a large table near the stove. These girls had come from Arkhangel'skaya and Volodgodskaya oblasts to work as lumberjacks.

After several more days of travel, we arrived at the logging point Muna. The street of the settlement is lined with an elementary school, a medical point with bed space, a post office, stores, and a Red Corner. Electric power lines run along the street.

From Muna to Lesnoy stretches a 70-kilometer 'zimnik', a road which exists only in the winter.

There is a lumber mill located in Lesnoy and we saw innumerable stacks of boards and beams in warehouses there. The railroad lies about 120 kilometers from Lesnoy; the mill's entire production is shipped by the White Sea during the summer.

We visited the two-story secondary school at Lesnoy, which includes a boarding school for 150 students. As we left the school, we were reminded of the words of the American writer Jack London, "to the north of the 57th parallel there are no laws, no gods, no humanity."

#### HELICOPTER RESCUE SERVICE -- Moscow, Vechernyaya Moskva, 24 Jul 54

Not long ago, the Main Administration of the Northern Sea Route received a radiogram from the distant polar station at Shelaurov [apparently a misprint for the station at Mys (cape) Shelaurov].

The radiogram stated that a resident of the polar station, located on one of the Ostrova (islands) Lyakhovskiy (station is located at the south-eastern tip of Ostrov Bol'shoi), was gravely ill and had to be removed to the hospital at Tiksi. The station lies hundreds of kilometers from Tiksi by water and there is no landing strip available for aircraft landing. Accordingly, a helicopter was immediately dispatched and brought the patient safely to the hospital at Tiksi.

A helicopter was also used recently to rescue a group of hunters who were trapped off the coast of Chukotka on an ice floe. -- M. N. Morozanov, chief, Polar Aviation

#### ANNIVERSARY MEETING HELD -- Moscow, Vodnyy Transport, 4 Sep 54

A "polar evening" was held recently at the headquarters of Glavsevmorput' on the 25th anniversary of the founding of the polar station at Bukhta Tikhaya.

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A report on the work of the station was made by B. A. Kremer, member of the Geographical Society USSR.

Others who wintered at the station at Bukhta Tikhiya -- E. T. Krenkel', I. D. Papanin, and Ye. K. Fedorov -- shared in recollections of the establishment of the station.

[Comment: It may be interesting to note that this appears to be the first reference made to Papanin in the Soviet press in several years.]

ARCTIC ADMINISTRATIVE PERSONNEL -- Moscow, Vechernyaya Moskva, 23 Jul 54

V. Akkuratov -- chief navigator, Administration of Polar Aviation.

Moscow, Moskovskaya Pravda, 7 Aug 54

M. Somov -- deputy director, Arctic Institute.

Moscow, Radio, No 11, Nov 54

M. Khodov -- chief, Administration of Polar Stations and Scientific Institutions, Glavsevmorput'.

RUSSIAN GEOGRAPHIC NAMES IN ANTARCTICA LISTED -- Leningrad, Izvestiya Vsesoyuznogo Geograficheskogo Obshchestva, No 5, Sep-Oct 54

(Article discusses and lists continental areas, seas, and islands discovered and named by Russian explorers in Antarctica.)

REPORT ON AMERICAN ARCTIC -- Moscow, Vodnyy Transport, 26 Aug 54

(Article on the American Arctic discusses shipping conditions, voyages made, and development.)

EDITOR OF BUKHTA PROVIDENIYA NEWSPAPER -- Moscow, Izvestiya, 30 Oct 54

Oleg Onishchenko is the editor of Na Vakhte, the newspaper published in Bukhta Provideniya.

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ILLUSTRATIONS OF PERSONNEL AND EQUIPMENT AT SEVERNYY POLYUS 3 --  
Moscow, Ogonek, 28 Nov 54

1. Caption: "Company Room at Severnyy Polyus 3"

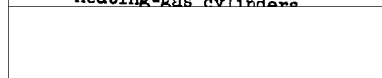
Description: Photo shows exterior view of company building which is composed of two portable houses.



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2. Caption: "Gas Cylinders Arrive by Plane at Severnyy Polyus 3 Drift Station"

Description: Photo shows aircraft SSSR N525 and GAZ-69 truck unloading heating-gas cylinders.



3. Caption: "Tent Interior at Severnyy Polyus 3 Drift Station"

Description: Photo shows interior of dome tents used at the drift stations.



4. Caption: "Interior of the Radio Room at Severnyy Polyus 3 Drift Station"

Description: Photo shows the interior of the radio shack and its equipment at the drift station.



[Appended figures and map follow:]

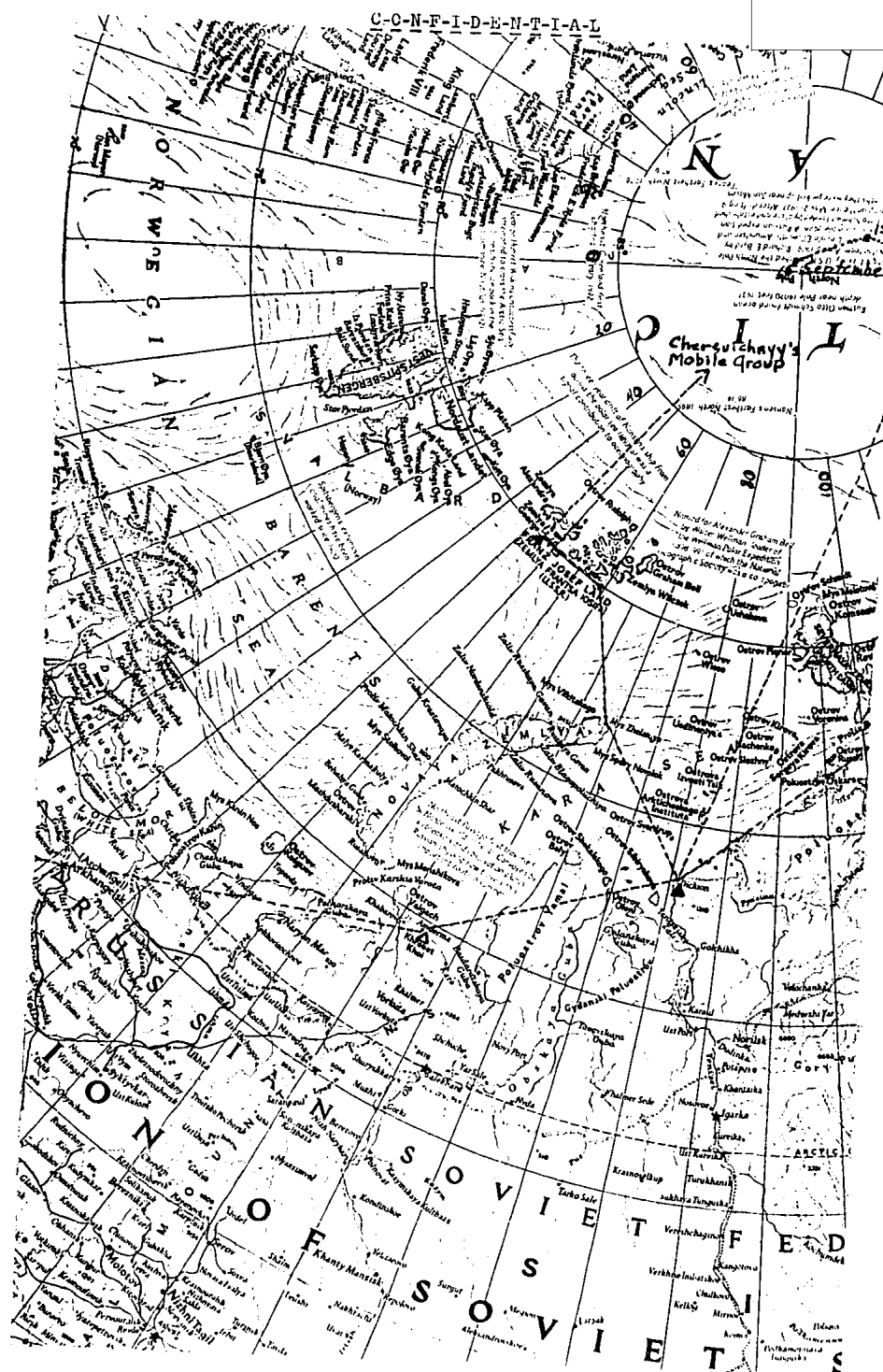
Location of Components of Polar Expedition,  
Its Supply Bases, and Aerial Routes Used

Note: Locations shown for intermediate camps on the ice are approximate. Drift tracks shown for the drifting stations are straight-line directions only; their actual course is very irregular.

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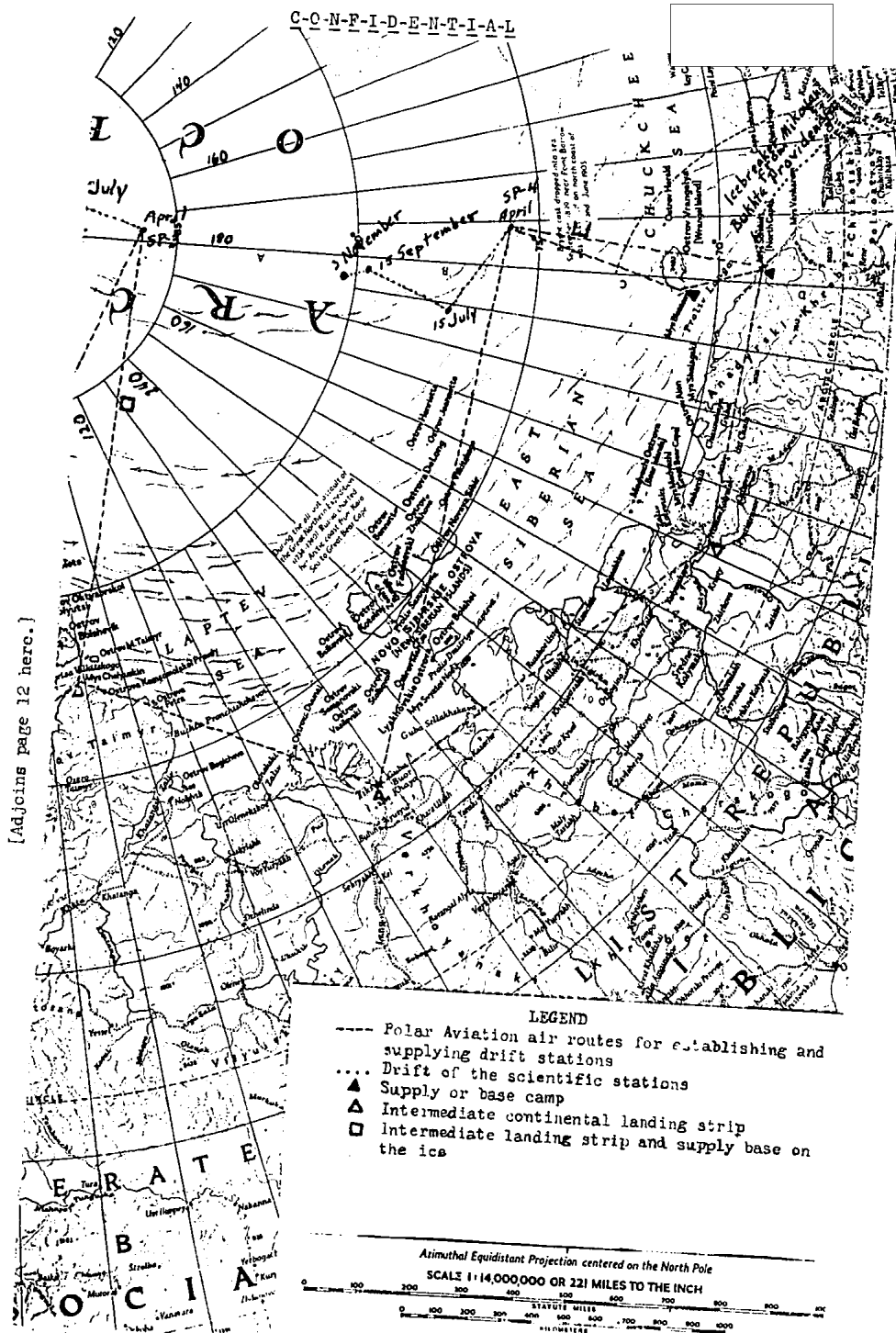
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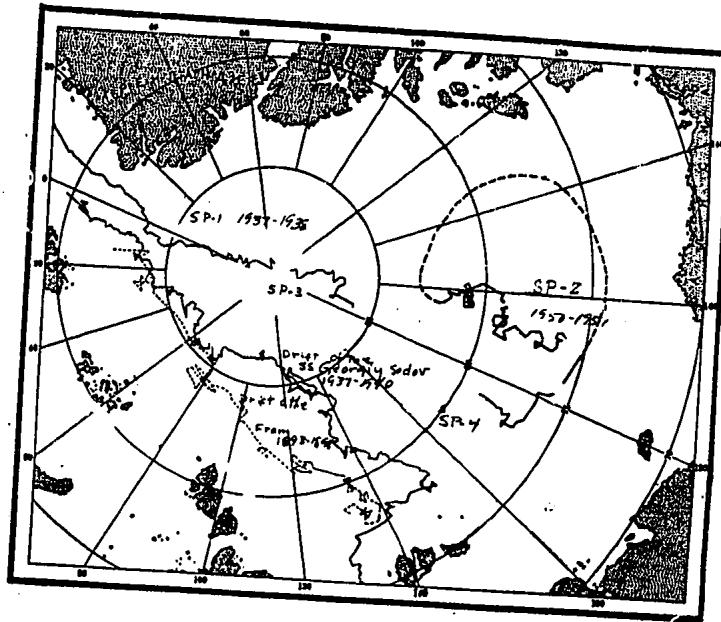


Figure 1. Drift of Research Expeditions in the Central Arctic  
 (Dotted line shows drift of SP-2 ice floe from April 1951 to June 1954 after removal of station.)

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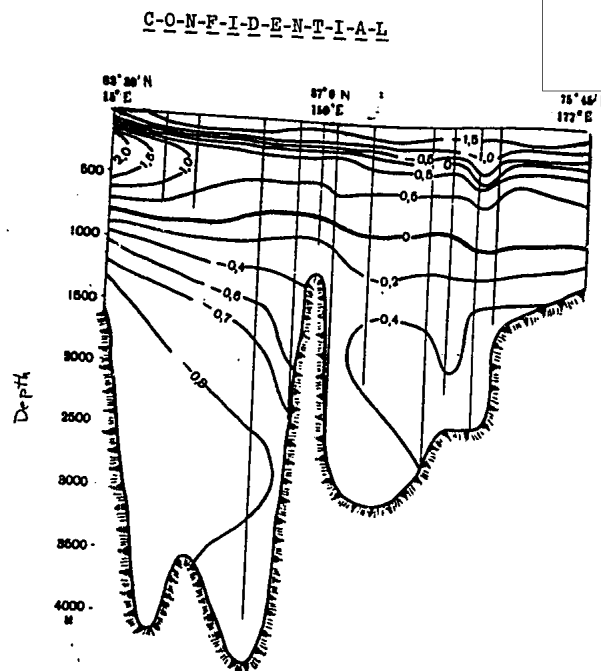


Figure 2. Temperature Distribution of Water Around Range imeni Lomonosov

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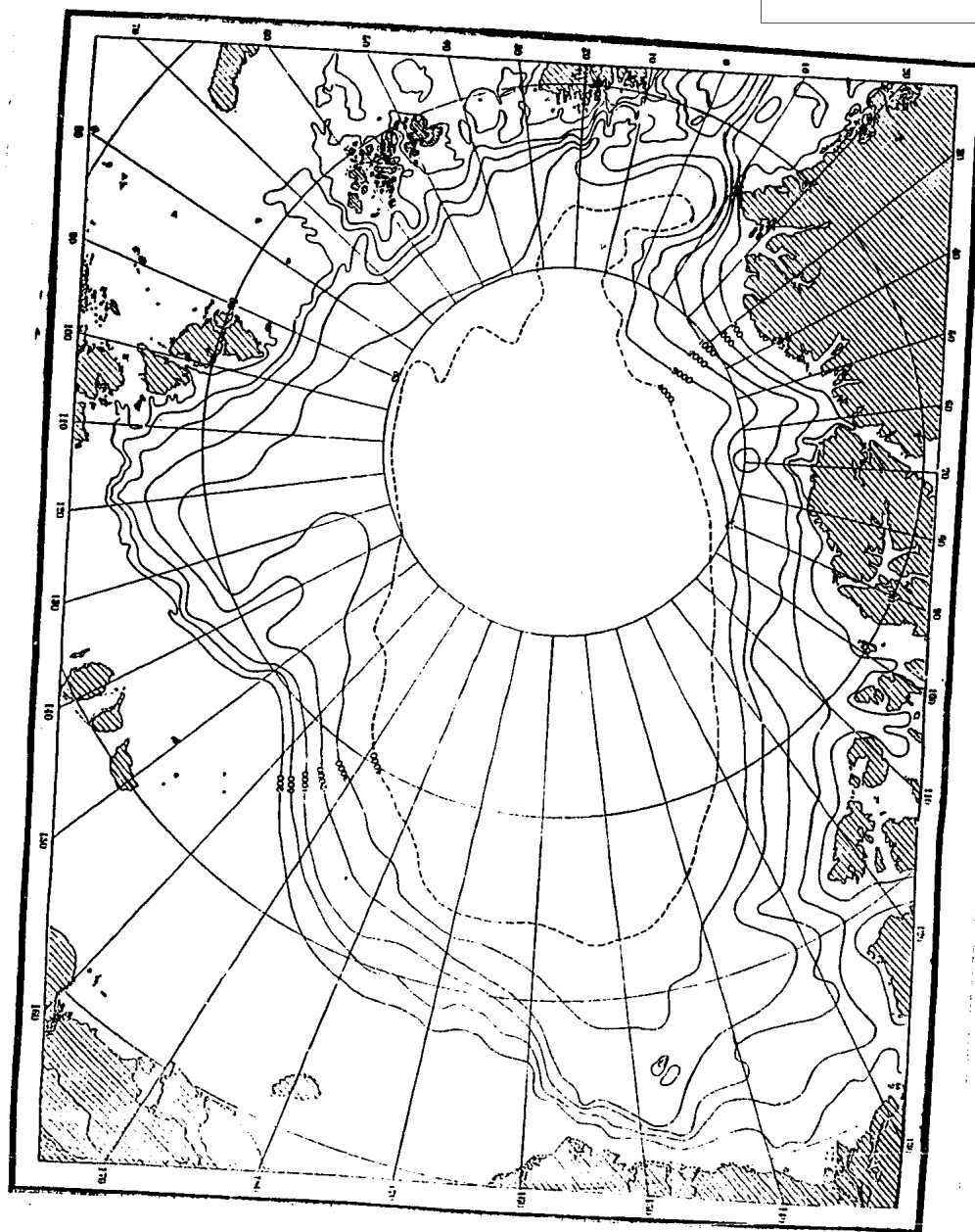


Figure 3. Bathometric Chart of the Central Arctic Basin up to 1948.

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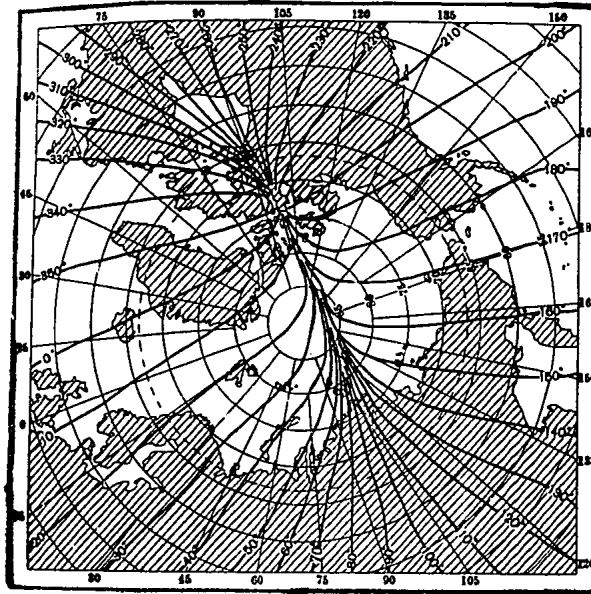


Figure 4. Bathometric Chart of the Central Arctic Basin in 1954.

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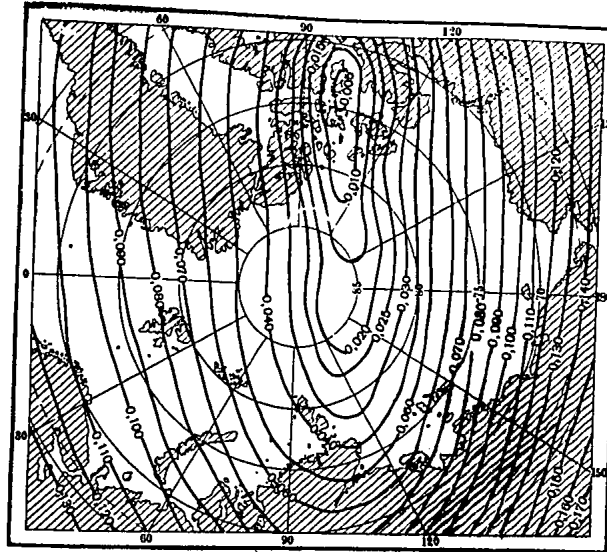


Figure 6. Chart of Horizontal Components in 1950.

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C-O-N-F-I-D-E-N-T-I-A-L

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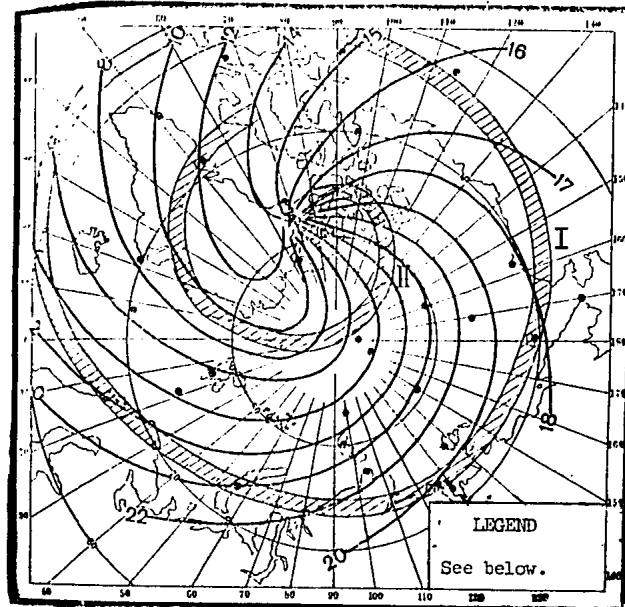


Figure 7. Chart of the Simultaneous Appearance of Maximum Morning Magnetic Disturbances. (Figures in Hours of World Time)

- Magnetic Station
- Line of simultaneous morning maximum disturbance
- I-II Zone of maximum deviation

- E N D -

- 20 -

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

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